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Phillip C. Watts

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EXAMINER

MOWLA, GOLAM

ART UNIT

PAPER NUMBER

1795

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/823,353

**Applicant(s)**

WATTS, PHILLIP C.

**Examiner**

GOLAM MOWLA

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07/07/2008 and 11/03/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-22 is/are pending in the application.
- 4a) Of the above claim(s) 17-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-850)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Individual Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

## **FINAL ACTION**

### ***Election/Restrictions***

1. Claims 17-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/03/2008.

### ***Response to Amendment***

2. Applicant's amendment of 07/07/2008 does not place the Application in condition for allowance.

3. Claims 8-22 are currently pending. Applicant has cancelled claims 1-7 and 23.

The amendment filed on 07/07/2008 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: (a) Claim 8 adds the limitation "at least one of the plurality of first thermal modules is flexibly coupled with at least one other of the plurality of the first thermal modules" in lines 10-11, which is not supported by the original disclosure as filed; (b) claim 8 adds the limitation "a plurality of first thermal modules, wherein: at least one of the plurality of first thermal modules is flexibly coupled with at least one other of the plurality of first thermal modules" in lines 9-11, and the limitation "a plurality of second thermal modules, wherein: at least one of the plurality of second thermal modules is flexibly coupled with at least one other of the

plurality of second thermal modules" in lines 17-20, which is not supported by the original disclosure as filed; (c) Claim 8 adds the limitation "at least one of the plurality of second thermal modules is flexibly coupled with at least one other of the plurality of the second thermal modules" in lines 18-20, which is not supported by the original disclosure as filed. The original disclosure does not provide any support for the flexible coupling between the plurality of second thermal modules.; (d) claim 11 adds the limitation "the compression mechanism is configured to compress with an actively viable force" in lines 3-4, which is not supported by the original disclosure as filed; (e) claim 14 adds the limitation "at least one of the plurality of first thermal modules flexibly coupled with at least one other of the first thermal modules such that the thermal modules have two degrees of freedom of movement relative to the each other" in lines 5-7, which is not supported by the original disclosure as filed; and (f) claim 15 adds the limitation "at least one of the plurality of first thermal modules flexibly coupled with at least one other of the first thermal modules such that the thermal modules have three degrees of freedom of movement relative to the each other" in lines 5-7, which is not supported by the original disclosure as filed.

Applicant is required to cancel the new matter in the reply to this Office Action.

#### ***Status of the Objections or Rejections***

4. The objections to the Drawings are withdrawn in view of Applicant's amendment.

5. Due to Applicant's cancellation of claims 1-7, all rejections from the office Action mailed on 02/04/2008 are withdrawn. However, upon further consideration, a new ground of rejection is presented below for new claims 8-16.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 8-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 8 adds the limitation "at least one of the plurality of first thermal modules is flexibly coupled with at least one other of the plurality of the first thermal modules" in lines 10-11, which is not supported by the original disclosure as filed. The original disclosure does not provide any support for the flexible coupling between the plurality of first thermal modules.

Claim 8 adds the limitation "a plurality of first thermal modules, wherein: at least one of the plurality of first thermal modules is flexibly coupled with at least one other of the plurality of first thermal modules" in lines 9-11, and the limitation "a plurality of second thermal modules, wherein: at least one of the plurality of second thermal

modules is flexibly coupled with at least one other of the plurality of second thermal modules" in lines 17-20, which is not supported by the original disclosure as filed. Examiner notes that the depicted figure shows only three hot and cold blocks. If the cold blocks (1 and 3) are assumed to be the plurality of first thermal modules, then there exists only one hot block (7) as the second thermal module. Therefore, the original disclosure is silent as to the plurality of second thermal modules. On the other hand, if the cold blocks (1 and 3) are assumed to be the plurality of second thermal modules, then there exists only one hot block (7) as the first thermal module. Therefore, the original disclosure is silent as to the plurality of first thermal modules.

Claim 8 adds the limitation "at least one of the plurality of second thermal modules is flexibly coupled with at least one other of the plurality of the second thermal modules" in lines 18-20, which is not supported by the original disclosure as filed. The original disclosure does not provide any support for the flexible coupling between the plurality of second thermal modules.

Claim 11 adds the limitation "the compression mechanism is configured to compress with an actively viable force" in lines 3-4, which is not supported by the original disclosure as filed.

Claim 14 adds the limitation "at least one of the plurality of first thermal modules flexibly coupled with at least one other of the first thermal modules such that the thermal modules have two degrees of freedom of movement relative to the each other" in lines 5-7, which is not supported by the original disclosure as filed.

Claim 15 adds the limitation "at least one of the plurality of first thermal modules flexibly coupled with at least one other of the first thermal modules such that the thermal modules have three degrees of freedom of movement relative to the each other" in lines 5-7, which is not supported by the original disclosure as filed.

***Claim Rejections - 35 USC § 102***

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
9. Claims 8-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Bass (US 5625245).

Regarding claims 8 and 14-15, Bass discloses a thermoelectric generator (1) (see fig. 1-4) (col. 2, lines 6-16) for generating electricity from a temperature differential between a first fluid (engine's cooling water) and a second fluid (exhaust gases of the engine) (col. 1, lines 21-28 and col. 2, lines 54-67), the thermoelectric generator (1) comprising:

- a plurality of thermoelectric modules (4), wherein:
  - each of the thermoelectric modules (4) comprises a first side(side facing heat sink 16) and a second side (side facing support structure 2); and
  - each of the thermoelectric modules (4) generates electricity when there is a difference in temperature between the first side and the second side (col. 1, lines 39-42);

- a plurality of first thermal modules (top and bottom heat sinks 16) (col. 2, lines 54-67), wherein:
  - at least one of the plurality of first thermal modules (top heat sink 16) is flexibly coupled with at least one other of the plurality of first thermal modules (bottom heat sink 16) such that the thermal modules have two or three degrees of freedom of movement relative to the each other;
  - at least one of the plurality of first thermal modules (16) is configured to receive the first fluid (cold fluid or engine's cooling water); and
  - at least one of the plurality of first thermal modules (16) is configured to exchange heat with the first side of at least one of the plurality of thermoelectric modules (4); and
- a plurality of second thermal modules (top and bottom support structures 2) (fig. 1-4) (col. 2, lines 19-39), wherein:
  - at least one of the plurality of second thermal modules (top 2) is flexibly coupled with at least one other of the plurality of second thermal modules (bottom 2);
  - at least one of the plurality of second thermal modules (2) is configured to receive the second fluid (hot fluid or exhaust gases); and



- at least one of the plurality of second thermal modules (2) is configured to exchange heat with the second side of at least one of the plurality of thermoelectric modules (4).

Regarding claim 9, Bass further discloses the thermoelectric generator further comprises a compression mechanism (spring force) (col. 1, lines 45-48) (col. 2, lines 62-67), wherein the compression mechanism is operably coupled with two of the plurality of first thermal modules (16) (col. 1, lines 45-48) such that at least one of the plurality of second thermal modules (2) and at least one of the plurality of thermoelectric modules (4) is compressed between two of the plurality of first thermal modules (16) (see fig. 1) (col. 3, lines 16-23).

Regarding claim 10-13, Bass further discloses that the compression mechanism comprises a rod (cylinder 28) and a spring (spring washer 22) (see fig. 5 and 6) (col. 3, lines 16-23). Since the compression mechanism comprises a rod and a spring as claimed in the instant Application, the compression mechanism is inherently configured to compress with an actively variable force, to compensate for thermal expansion and thermal contraction of at least one of the plurality of first thermal modules, and to compensate for stack tolerance build-up of the plurality of first thermal modules. Claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. See MPEP §2112. See also *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977).

***Claim Rejections - 35 USC § 103***

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bass as applied to claim 8 above, and further in view of Sorber (US 4564504).

Applicant is directed above for complete discussion of Bass with respect to claim 1, which is incorporated herein. Bass is silent as to the use of o-ring slip joint to couple at least one of the plurality of the first thermal modules with at least one other of the first plurality of first thermal modules.

Sorber teaches the use of o-ring slip joint between a pipe and cooling tower house facilitates the expansion and contraction of the cooling tower components during the process (col. 2, lines 1-4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the o-ring slip joint of Sorber in the thermoelectric generator of Bass in order to facilitate the expansion and contraction of the components of the heat sink of Bass, as taught by Sorber.

***Response to Arguments***

12. Applicant's arguments with respect to newly presented claims 8-16 have been fully considered but they are not persuasive.

Applicant argues that "support for these claims may be found throughout the specification and figures. Therefore, Applicant respectfully submits that no new matter is added by this amendment" (see Remarks, page 2).

The Examiner respectfully disagrees. The added material which is not supported by the original disclosure is as follows: (a) Claim 8 adds the limitation "at least one of the plurality of first thermal modules is flexibly coupled with at least one other of the plurality of the first thermal modules" in lines 10-11, which is not supported by the original disclosure as filed; (b) claim 8 adds the limitation "a plurality of first thermal modules, wherein: at least one of the plurality of first thermal modules is flexibly coupled with at least one other of the plurality of first thermal modules" in lines 9-11, and the limitation "a plurality of second thermal modules, wherein: at least one of the plurality of second thermal modules is flexibly coupled with at least one other of the plurality of second thermal modules" in lines 17-20, which is not supported by the original disclosure as filed; (c) Claim 8 adds the limitation "at least one of the plurality of second thermal modules is flexibly coupled with at least one other of the plurality of the second thermal modules" in lines 18-20, which is not supported by the original disclosure as filed. The original disclosure does not provide any support for the flexible coupling between the plurality of second thermal modules.; (d) claim 11 adds the limitation "the compression mechanism is configured to compress with an actively viable force" in lines 3-4, which is not supported by the original disclosure as filed; (e) claim 14 adds the limitation "at least one of the plurality of first thermal modules flexibly coupled with at least one other of the first thermal modules such that the thermal modules have two

degrees of freedom of movement relative to the each other" in lines 5-7, which is not supported by the original disclosure as filed; and (f) claim 15 adds the limitation "at least one of the plurality of first thermal modules flexibly coupled with at least one other of the first thermal modules such that the thermal modules have three degrees of freedom of movement relative to the each other" in lines 5-7, which is not supported by the original disclosure as filed.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Correspondence/Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GOLAM MOWLA whose telephone number is (571) 270-5268. The examiner can normally be reached on M-F, 0900-1700 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ALEXA NECKEL can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. M./  
Examiner, Art Unit 1795

/Alexa D. Neckel/  
Supervisory Patent Examiner, Art Unit 1795

